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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,068	04/06/2001	Takuma Hiramatsu	55340 (840)	9269
21874	7590	06/28/2005	EXAMINER	
EDWARDS & ANGELL, LLP			BELLO, AGUSTIN	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	

2633

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/674,068

Applicant(s)

HIRAMATSU, TAKUMA

Examiner

Agustin Bello

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26-43 is/are pending in the application.
- 4a) Of the above claim(s) 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-28, 30-35, 37, 38, 40, 41 and 43 is/are rejected.
- 7) ☒ Claim(s) 29, 39 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/7/05 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26-28, 30-32, 37, 38, 40, 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over being unpatentable over Welch (U.S. Patent No. 5,903,373) in view of Ota (U.S. Pat. No. 5,986,790).

As claims 26 and 32, Welch discloses base station (fig. 8) (col. 11, lines 12-20) for use in a space-division multiplex optical wireless local area network for interconnecting a plurality of terminals (such as 14), the base station comprising: an angle-diversity detector (receiver) (109, detailed in fig. 11) (col. 21, lines 2 - col. 22, line 2), and a multi-beam transmitter (105, detailed in fig. 10) for outputting a plurality of beams, wherein the multi-beam transmitter includes a plurality of optical transmitters (see fig. 14), and each of the plurality of optical transmitters

Art Unit: 2633

includes at least one LD or at least one LED as a light source (col. 11, lines 60-65), and wherein said angle-diversity receiver includes a plurality of receiving elements (e.g. “plurality of angularly diverse infrared detectors” of claim 11) at least one of said plurality (e.g. “two of the measuring detectors” of claim 11) of receiving elements being separately associated with each respective one of said different space cells. Welch fails to show optical transmitter as to form a plurality of space cells each having a predetermined size. However, Ota, in figure 228 shows optical transmitter to form a plurality of space cell (detailed in fig. 23A) (Ota, col. 15, lines 61-62). Ota further discloses the transmitter (light source) is an array (consisting of seven) light sources (or LED). Therefore, it would have been obvious to one having ordinary skill in the art to use the transmitter configuration, which is formed by a plurality of LEDs and inherently including the predetermined size (seven of light sources), as taught by Ota, into the communication system of Welch in order to increase the transmitting power. One would have been motivated for doing this since with a plurality of light source, the transmitting beam is realized in spatial diversity (col. 16, lines 12-16) and as a results, enhancing receiving at the receiver end.

As claims 27 and 28, the system, as a combination of Welch and Ota, described above in that, Ota (fig. 24) shows the plurality of optical transmitters are set to specific direction and/or angle different from each other. (Ota, col. 16, lines 3-9).

As claims 30, 37, 38 Ota (fig. 228) discloses the optical receiver including lenses system (175) dedicated to reception having a spatial resolution higher than a spatial resolution of the plurality of space cells each having a predetermined size (Ota, col. 15, lines 61-62 and col. 16, lines 9-16).

Art Unit: 2633

As claims 31, 40, 41 and 43, the system, as a combination of Welch and Ota, described above in that Welch and Ota do not clearly show a radius of a space cell is in range from 20 cm to 100 cm. However, it would have been an obvious matter of design choice, since the space cell is a transmitting device that LEDS are arranged or combined together, so, the number of LEDS have involved a mere change in the size of a space cell. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

4. Claims 33, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welch (Pat. No. 5,903,373) in view of Ota ( U.S. Pat. No. 5,986,790), as applied in the claim 32, and in further view of Knapp (U.S. Pat. No. 4,975,926) and Sumi et al. (U.S. Pat. No. 4,536,057).

As claim 33, the modified network system of Welch and Ota, as described in section 8 above, fails to show receiver having an optical filter for selectively attenuating light transmitted from the transmitter of the terminal, and means for easily removing the optical filter. However, Knapp discloses receiver having an optical filter (81 , fig. 9) for selectively attenuating light transmitted from the transmitter of the terminal (Knapp, col. 5, lines 9-14 and lines 54-56). Knapp further differs from the claimed invention in that Knapp fails to show a means for removing the optical filter.

But, Sumi shows mounting mechanism for attaching and detaching the filter (Sumi, Abstract and col. 4, lines 34-36). Therefore, it would have been obvious to one having ordinary skill in wireless (optical) communication art to use an optical receiver associated with an optical filter as mentioned by Knapp, and employ with filter mounting mechanism as taught by Sumi in order to attenuate the light transmitted from the transmitter and improve the flexibility of the

Art Unit: 2633

device in both assembly and adjustment process (Sumi, col. 2, 18-23 and Abstract). One would have motivated for doing this since the filter prevents the interference between the optical signal and the room light (Knapp, col. 5, lines 12-14). As claims 34 and 35, Ota (fig. 25) shows the transmitter including plurality of light sources (173a, 173b, ....) and a signal intensity multiplexer (206), that are used to select or detect a sufficient intensity from the spectrum components (Ota, col. 16, line 25-29).

#### ***Allowable Subject Matter***

5. Claims 29, 39, and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

6. Applicant's arguments filed 6/7/05 have been fully considered but they are not persuasive. The examiner has considered the applicant's arguments and has further considered the amendments made to the claim language. The applicant maintains that the cited references fail to teach the limitations of the claimed invention. However, upon further consideration of the cited references, the examiner continues to believe that the cited references meet the limitations of the claimed invention as presently recited. The applicant argues that Welch fails to specifically teach a space division multiplex optical communication system. However, the examiner disagrees. In fact, Welch by definition teaches a space division multiplex communication system. The 19<sup>th</sup> edition of Newton's Telecom Dictionary defines space division multiplexing as:

Art Unit: 2633

*“Each distinct signal or message travels over a separate physical path such as its own wire or wire path within a cable”*

In Welch, each distinct signal emitted from the transmitter is transmitted over a separate physical path in space. While the information carried on each signal may be the same, each signal is separate and distinct from each other signal in terms of direction of propagation, angle of divergence from the horizontal, and many other spatial characteristics. As such, the examiner maintains that the Welch does indeed teach space division multiplexing.

Furthermore, the recitation “space division multiplexing” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Moreover, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). In this case, the combination of references provide all the structure needed to perform the space division multiplexing as recited in the claimed invention.

Art Unit: 2633

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB

  
**AGUSTIN BELLO**  
**PATENT EXAMINER**